

REMARKS/ARGUMENTS

The Invention

The invention is the discovery that a lectin nucleotide phosphohydrolase (LNP) which binds nodulation factors of *Rhizobium* species, also promotes mycorrhizal associations between the plants and mycorrhizal fungi.

Status of the Claims

Claims 1, 4-5, 9, 11, and 13-14 are pending in this application.

Claim 1 is currently amended. Support for the Amendment to Claim 1 can be found throughout the specification; for example support for infecting plants with mycorrhizal fungi can be found in claim 13, as filed. Claim 13 is cancelled. Claim 14 is currently amended as depending on Claim 1. Claim 4 is amended to correct an obvious typographical error. SEQ ID NO: 8 is the DNA sequence encoding SEQ ID NO: 10, not SEQ ID NO: 5, as pointed out in the Office Action.

New claim 15, directed to nucleic acids encoding LNP proteins from *Dolichus biflorus* (SEQ ID NO: 2) and *Medicago sativa* (SEQ ID NO: 4), is added with this amendment. Both proteins are within the scope of claim 1. Support for this claim is found in throughout the specification and in particular in the sequence listing. No new matter is added by these Amendments.

Response to Objections

The Examiner objects to claim 4 for reciting SEQ ID NO:5 instead of SEQ ID NO:8 as was stated in the previous version of the claims. The Applicants thank the Examiner for pointing out the error and have made the appropriate correction.

Response to Rejections

Rejections under 35 U.S.C. §112, first paragraph

Written Description

1. New Matter

The Examiner rejects claims 1, 5, 9, 11, and 13-14 as allegedly lacking support in the specification for the phrase "selecting plants that have increased mycorrhizal infection". In order to expedite prosecution, Claim 1 is amended to remove this language and to include "and infecting the plants with mycorrhizal fungi". Support for this amendment is found in claim 13m which is canceled with this amendment. Claim 14 is amended to recite "The method of claim 1". Applicants submit that no new matter is presented and respectfully request the withdrawal of the rejection.

2. Possession of the Claimed Invention

The Examiner rejects claims 1, 4-5, 9, 11, and 13-14 under 35 U.S.C. §112, first paragraph, for allegedly failing to convey to one skilled in the art that the inventors had possession of the claimed invention at the time the application was filed.

Specifically, the Examiner states that the Applicants' claims do not specify that the claimed sequences encompassing nucleic acid sequences encoding a polypeptide at least about 70% identical to SEQ ID NO:10 also encode a peptide with the function of a Nod factor binding protein. The Examiner kindly suggests the rejection will be obviated by amending the claims to recite that the claimed nucleic acids encode proteins with Nod factor binding function.

The Applicants thank the Examiner for his suggestion, and have amended the claims accordingly. Withdrawal of the rejection is respectfully requested.

Scope of Enablement

The Examiner rejects claims 1, 4-5, 9, 11, and 13-14 under 35 U.S.C. 112, first paragraph as allegedly not enabled for methods of increasing mycorrhizal infection by transforming plants with a nucleic acid encoding a protein with 70% sequence identity to SEQ ID NO:10.

However, the Examiner kindly points out that the claims are enabled for a method of increasing mycorrhizal infection by transforming plants with a heterologous LNP polynucleotide wherein the LNP polynucleotide encodes an LNP polypeptide at least about 70% sequence identity to SEQ ID NO:10 and functions as a Nod factor binding protein.

Again the Applicants thank the Examiner for pointing out his observation. Accordingly, the claims are amended to recite that the method comprises transforming a plant with an LNP polynucleotide that encodes an LNP polypeptide at least about 70% sequence identity to SEQ ID NO:10 and functions as a Nod factor binding protein. Withdrawal of the rejection is respectfully requested.

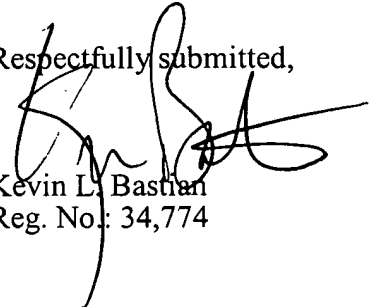
Double Patenting

The Examiner rejects claims 1, 4-5, 9, 11, and 13-14 under the judicially created doctrine of obviousness-type double patenting over claims 1-4, and 7-8 of U.S. Patent 6,465, 716 to Etzler and Murphy. The claims as presently amended recite a method, wherein the LNP gene is introduced into plants, and the plants are infected with mycorrhizal fungi, which is not explicitly disclosed in the prior art. Therefore, Applicants respectfully request the withdrawal of the rejection.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at 415-576-0200.

Respectfully submitted,


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